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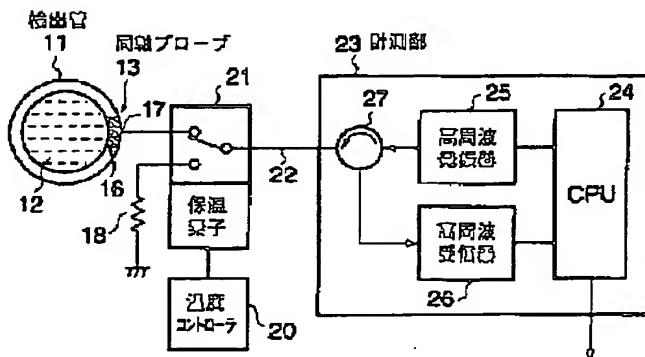
APPLICANT : MITSUBISHI HEAVY IND LTD;

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TITLE : MEASURING APPARATUS FOR CONCENTRATION OF LIQUID AND CONTROL DEVICE FOR CONCENTRATION FOR DRINK FILLING

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ABSTRACT : PROBLEM TO BE SOLVED: To obtain a measuring apparatus, for the concentration of a liquid, which is excellent in corrosion resistance and vibration-proofness, which is of high accuracy and which obtains high reliability.

SOLUTION: A single coaxial probe 13 is attached to a detecting pipe 11 in which a liquid 12 to be measured flows in its inside. In a measurement, microwaves are output from a high-frequency oscillator 25, and they are input to the center conductor 17 of the coaxial probe 13 via a circulator 27, a connecting cable 22 and a changeover switch 21. The microwaves which are input to the center conductor 17 from its tip are radiated to the liquid 12 from its tip, and a part is reflected by the interface of the liquid according to its concentration so as to be sent to a high-frequency receiver 26 via the changeover switch 21, the connecting cable 22 and the circulator 27. The receiving 26 detects the intensity and the phase of reflected waves which are sent from the coaxial probe 13, and the intensity and the phase are input to a CPU 24. The CPU 24 finds the relative permittivity of the liquid 12 on the basis of the intensity and the phase of the reflected waves, and it calculates the concentration of the liquid.

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